

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Rat                                                                                                                                                                                                                                 |
| <b>Specificity</b>                                                                                                                                                                                      | Detects rat IL-13 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse (rm) IL-4, recombinant human IL-13, rmlIL-13, or recombinant rhesus macaque IL-13 is observed. |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Mouse IgG <sub>2B</sub> Clone # 296202                                                                                                                                                                                   |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                          |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant rat IL-13<br>Thr19-His131<br>Accession # P42203                                                                                                                                                 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 nm                                                                                                                                                     |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                                                                                                                                                        |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                                                                                                                                                     |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| <b>Neutralization</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>   | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

IL-13 is a 17 kDa immunoregulatory cytokine that plays a key role in the pathogenesis of allergic asthma and atopy. It is secreted by Th1 and Th2 CD4<sup>+</sup> T cells, NK cells, visceral smooth muscle cells, eosinophils, mast cells, and basophils (1-3). IL-13 circulates as a monomer with two internal disulfide bonds that contribute to a bundled four  $\alpha$ -helix configuration (4, 5). Mature rat IL-13 shares 59%, 75%, and 60% amino acid sequence identity with human, mouse, and rhesus IL-13, respectively. Despite the low homology, it exhibits cross-species activity between human, mouse, and rat (6, 7). IL-13 has diverse activities on numerous cell types (8). On macrophages, IL-13 suppresses the production of proinflammatory cytokines and other cytotoxic substances. On B cells, IL-13 induces immunoglobulin class switching to IgE, up-regulates the expression of MHC class II, CD71, CD72, and CD23, and costimulates proliferation. IL-13 up-regulates IL-6 while down-regulating IL-1 and TNF- $\alpha$  production by fibroblasts and endothelial cells. IL-13 binds with low affinity to IL-13 R $\alpha$ 1, triggering IL-13 R $\alpha$ 1 association with IL-4 R $\alpha$ . This high affinity receptor complex also functions as the type 2 IL-4 receptor complex (9, 10). Additionally, IL-13 binds with high affinity to IL-13 R $\alpha$ 2 which is expressed intracellularly, on the cell surface, and as a soluble molecule (11-14). IL-13 R $\alpha$ 2 regulates the bioavailability of both IL-13 and IL-4 and is over-expressed in glioma and several bronchial pathologies (10, 15, 16). Compared to wild type IL-13, the atopy-associated R110Q variant of IL-13 elicits increased responsiveness from eosinophils that express low levels of IL-13 R $\alpha$ 2 (17).

## PRODUCT SPECIFIC NOTICES

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